

CLAIMS

1. A current source adapted to produce an output current comprising:
first and second circuit branches connected between first and second reference
voltages, the first branch including a branch resistor connected at a junction node to a
5 compensation resistor which is connected to the second reference voltage; and
a start-up circuit connected to generate a start-up current at the junction node
whereby the voltage across the compensation resistor increases with the first reference
voltage and acts to reduce changes in the output current with the first reference voltage.
- 10 2. A current source according to claim 1, wherein the first circuit branch
comprises first and second series-connected bipolar transistors, the base of the first
transistor being connected to its collector.
3. A current source according to claim 2, wherein the second circuit branch
15 comprises third and fourth series-connected bipolar transistors, the third bipolar
transistor being connected as a current mirror with the first bipolar transistor and the
fourth bipolar transistor being connected as a current mirror with the second bipolar
transistor.
- 20 4. A current source according to claim 2 or 3, which comprises an output
transistor having its base connected to the base of the first transistor, the collector current
of the output transistor constituting the output current.
5. A current source according to claim 2, 3 or 4, wherein the branch resistor
25 is connected between the junction node and the emitter of the second transistor.
6. A current source according to any preceding claim, wherein the start-up
circuit comprises a pair of start-up transistors connected in a current mirror configuration
and a start-up resistor connected between the collector of one of said start-up transistors
30 and said junction node.
7. A current source according to claim 3, wherein the area of the second

transistor is larger than the area of the fourth transistor.